In its final report, an expert panel of medical professionals concludes that the use of conducted energy devices by police officers on healthy adults does not present a high risk of death or serious injury.

Today, more than 12,000 law enforcement agencies in the United States use conducted energy devices (CEDs) as an alternative to conventional physical control tactics or other means of subduing uncooperative persons. An NIJ-sponsored expert panel, convened to evaluate the safety and effectiveness of CEDs, issued its final report in May 2011. The panel concluded that law enforcement officers need not refrain from using CEDs to place uncooperative and combative subjects in custody provided that the CEDs are used in accordance with accepted national guidelines and an appropriate use-of-force policy. In its report, the panel concluded that field use of CEDs is safe in the vast majority of cases and creates less risk of injury — to officers and suspects alike — than other options of subduing uncooperative persons.

In addition to investigating the effects of CEDs, the panel issued recommendations for their use. Among these were to apply CEDs for no longer than 15 seconds at a time and to limit the number of discharges to the fewest needed to control the suspect. The panel also said that, regardless of how long the CED exposure lasts, some form of medical screening and ongoing observation of individuals exposed to CEDs is crucial. Screening should start at the scene and individuals should continue to be monitored in
The panel concluded that, in general, the stress of receiving a CED discharge is comparable to the stress from otherwise being physically restrained or subdued.

In the vast majority of these cases, the original medicolegal investigations concluded that CED exposure was not the cause of death. The panel conducted in-depth reviews of 22 of those 300 cases and reviewed approximately 175 peer-reviewed articles on the physiological effects of CEDs. The panel’s report provides findings concerning death investigation, CED use, CED-related health effects and medical response to the use of CEDs. The panel determined that there is no conclusive medical evidence in the current body of research literature that indicates a high risk of serious injury or death to humans from the direct or indirect cardiovascular or metabolic effects of short-term CED exposure in healthy, non-stressed, non-intoxicated persons.

Field experience with CED use indicates that short-term exposure is safe in the vast majority of cases. According to the final report, the risk of death in a CED-related use-of-force incident in the general population is less than 0.25 percent (one in 400). The report notes that, based on the panel’s review and confirmation of the findings of the original death investigations of 300 deaths following CED exposure, it is reasonable to conclude that CEDs do not cause or contribute to death in the large majority of cases.
Repeated CED exposure are not fully understood. The panel acknowledged that there may be circumstances in the field that require repeated or continuous exposure to a CED discharge. They highlighted the possibility of secondary injuries resulting from the use of CEDs on tall structures or steep slopes, where individuals exposed to a CED could fall; near flammable materials (including gasoline, explosives, aerosols and propellants) that a spark from a CED could ignite; and in water, where submersion could lead to drowning. The use of CEDs also presents a risk of interfering with implantable cardiac devices, such as pacemakers, although no bad outcomes have been reported. Furthermore, the physiological effects of prolonged or repeated CED exposure are not fully understood.

The panel acknowledged that there may be circumstances in the field that require repeated or continuous exposure to a CED discharge. They
emphasized that law enforcement personnel must be made aware that the associated risks are unknown and most deaths associated with CED use involved multiple or prolonged discharges. The report states that it is critical that law enforcement officers minimize or avoid multiple or prolonged activations of CEDs as a means of subduing an individual.

The report also states that the safety margins of CED use in healthy adults may not apply to everyone. The effects of CED exposure on small children, those with diseased hearts, the elderly, pregnant women and other potentially at-risk individuals are not clearly understood, and more data are needed. Law enforcement personnel should minimize or avoid use of a CED on members of these populations.

In addition to recommendations governing the use of CEDs, the panel issued advice in the event a death occurs following the use of a CED. The panel recommended that all deaths following deployment of a CED should be subject to a complete medicolegal investigation. This investigation should include an autopsy by a forensic pathologist and a medically objective investigation independent of law enforcement. In addition to the conventional information collected in a death investigation, investigators should collect information specific to the CED-related death, such as the manner in which CED darts or prongs were applied and where they were applied.

Finally, the panel recommended that law enforcement personnel maintain an ongoing dialogue with medical examiners or coroners and emergency physicians to discuss effects of all use-of-force applications, including those involving CEDs, and evaluate procedures involving life preservation, injury prevention and evidence collection.

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